

**REMARKS**

Reconsideration of the subject application is respectfully requested in light of the amendments above and the comments which follow.

Claims 1-8 are pending in this application.

***CLAIM REJECTIONS UNDER 35 U.S.C. §103***

**1. REJECTIONS BASED UPON COMBINATIONS INCLUDING U.S.  
APPLICATION PUBLICATION NO. 2004/0186000 TO KAWAMOTO ET AL.**

U.S. Application Publication No. 2004/0186000 to Kawamoto et al. (hereafter "*Kawamoto et al.*") is a cited reference in two separate rejections. Claims 1-8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,468,933 to Narita et al. (hereafter "*Narita et al.*") in view of *Kawamoto et al.* on the grounds set forth on page 2 of the Official Action. Also, Claims 1-8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,508,083 to Naka et al. (hereafter "*Naka et al.*") in view of *Kawamoto et al.* on the grounds set forth on page 3 of the Official Action. For at least the reasons noted below, both of these rejections should be withdrawn.

The date of invention of the present application based on a perfected priority date is prior to the date the *Kawamoto et al.* reference is available as prior art. Applicants submit herewith an English translation of the foreign priority document JP 2003-205812 filed in Japan on August 4, 2003, with the purpose of perfecting the priority claim and overcoming the date of the *Kawamoto et al.* reference. See MPEP §§ 201.13-15 and 706.02(b). The foreign priority document antedates the *Kawamoto et al.* reference, *i.e.*,

is before any of the filing date (February 17, 2004) and date of publication (September 23, 2004) of the application. Thus, the *Kawamoto et al.* reference is not available as prior art to the present application and rejections based upon the *Kawamoto et al.* reference are improper.

For at least the above reasons, Applicants respectfully request withdrawal of all rejections relying in whole or in part upon the *Kawamoto et al.* reference, e.g., the rejection of claims 1-8.

## 2. REJECTIONS BASED UPON COMBINATIONS INCLUDING U.S. PATENT NO. 3,622,296 TO BUEHL

U.S. Patent No. 3,622,296 to Buehl (hereafter "*Buehl*") is a cited reference in two separate rejections. Claims 1-8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Narita et al.* in view of *Buehl* on the grounds set forth on page 3 of the Official Action. Also, claims 1-8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Naka et al.* in view of *Buehl* on the grounds set forth on page 4 of the Official Action. For at least the reasons noted below, both of these rejections should be withdrawn.

### a. Summary of Claimed Subject Matter

The specification is directed generally to alkali-free glass. The specification discloses that helium and/or neon is included in the composition. The helium and/or neon has both a fining effect and a multiplying effect obtained by diffusion (see, page 6, lines 9 – 13). Effects of the amount of helium and/or neon are further disclosed as having a range of 0.0001 to 2 µl/g (see, e.g., pages 7-8).

The above disclosed features are generally embodied in the claims. For example, the alkali-free glass of claim 1, the only independent claim in the application, comprises, among other things, helium and/or neon in an amount of from 0.0001 to 2  $\mu\text{l/g}$  (0°C, 1 atm).

b. The Proposed Combinations Due Not Include The Claimed Amount Of Helium and/or Neon

The Official Action recognizes that neither *Narita et al.* nor *Naka et al.* teach the use of He and/or Ne and  $\text{SO}_3$  as a fining agent addition in the glass (see, Official Action page 3 and 4). To support the rejection, a combination with *Buehl* is proposed, where *Buehl* is alleged to teach glasses that can have more complete fining by the use of  $\text{SO}_3$  and He.

Applicants respectfully disagree with the alleged teachings in *Buehl*. Rather, it is respectfully asserted that *Buehl* simply teaches a bubbling rate of helium rather than a content of helium in the glass. Further, when one determines the amount of helium present in the glass using a method as disclosed in *Buehl*, one finds that the composition includes helium in an amount greater than 2  $\mu\text{l/g}$ .

In support of its position, Applicants have reproduced *Buehl's* experiments to demonstrate (i) that the He-contents in *Buehl's* glass compositions are more than the upper limit (2  $\mu\text{l/g}$ ) of the range of claim 1, and (ii) that the He-content in *Buehl*, i.e., a He content higher than 2  $\mu\text{l}$ , results in disadvantageous reboiling.

In summary, *Buehl* does not disclose the He-content in its glass composition, but the Applicants have shown from the attached Declaration that *Buehl's* glass

composition has He-contents greater than the upper limit of the range of 0.01-2  $\mu\text{l/g}$  of claim 1. Moreover, for a BSG composition of *Buehl*, an He/Ne-content ***larger*** than 2  $\mu\text{l/g}$  causes undesired reboiling in a glass molding process conducted at a temperature of 1000-1200°C, at which *the saturated He/Ne-content is considerably less than 2  $\mu\text{l/g}$*  so that excess He/Ne forms bubbles in the glass melt significantly lowering the quality of the glass product. Therefore, in *Buehl's* patent, the He-content has to be large for fining of the glass. In contrast, in this application, fining of the glass can be achieved with a lower He-content of 0.01-2  $\mu\text{l/g}$ .

Form the above, it is respectfully asserted that the inclusion of *Buehl* in the proposed combination does not in fact result in the alleged property of the claimed helium and/or neon in an amount of from 0.0001 to 2  $\mu\text{l/g}$  (0° C, 1 atm.). As a result, the *prima facie* case of obviousness has been rebutted and the proposed combination is missing at least this claimed feature. Accordingly, the rejection should be reconsidered and withdrawn.

**CONCLUSION**

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

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